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Biomedical Politics Feels the AIDS Crisis

While news coverage of the AIDS epidemic has focused on the mystery, terror, and sexual aspects of the disease, little attention has been paid to the turmoil it has created in the politics of biomedical research.

That part of the story is worth looking at, for it reveals even more than we've had before about the selective stinginess of the Reagan Administration's policymakers. A close examination of who did what and when in response to an increasing incidence of the disease produces mixed marks for the professional chiefs of the biomedical research establishment. And it turns out that the political hero of the fearful AIDS saga is the US Congress, which, dubious of Administration assurances that ample resources were being deployed for AIDS research, finallly saw to it that needed money was made available.

Incredibly, even as recently as a few months ago, the Administration, after repeatedly insisting that it did not need additional funds, reversed itself and said that an additional $12 million for AIDS research was needed for the waning months of this fiscal year. It proposed to raise the money by cannibalizing other programs in the already barebones Department of Health and Human Services. Congress wisely refused and included the money in the 1983 supplemental appropriations bill.

Slowdown Reported in Industrial Support of Basic Research—P. 5

Finally, there's the true-to-form performance of the National Institutes of Health, which cherishes slow-moving peer review not only as a valuable administrative tool but also as a shield against Congressional intrusions on scientific decisions. Confronted by a disease of limited incidence but possibly horrendous potential, NIH rose to the occasion by cutting the time from application to award to only 8 months. The speedup was in large part achieved by a rare resort to the telephone to accelerate the approval process. But otherwise, the review procedure was proceeding at "the normal pace," as Vincent T. DeVita Jr., Director of the National Cancer Institute, testified with apparent pride before an incredulous House Subcommittee in February.

As of today, as a result of vigorous Congressional intervention, the US government has mobilized a substantial and growing research effort against AIDS. But in view of the Administration's repeated efforts to do it on the cheap—for example, by switching funds from venereal disease and hepatitis research at the Centers for Disease Control—its public boasts of conducting all-out war on AIDS are grotesque.

Health and Human Services Secretary Margaret M. Heckler has proclaimed that "AIDS is the number one health priority of my Department"; and Assistant Secretary for Health Edward N. Brandt has made similar statements. If that's the case, concern is in order about the handling of less-publicized but also serious diseases in the HHS research portfolio.

Let's look at specifics of the government's response to AIDS:

In September 1981—following the identification of a series of AIDS cases throughout the previous spring—

(Continued on page 3)

In Brief

NIH says it has set aside $6.07 million this fiscal year to comply with the Small Business Innovation Act, which requires most federal research agencies to support research in small firms. NIH opposed the legislation, claiming the set-aside requirement was incompatible with peer review.

President Reagan, newly cast as a friend of education, has claimed that the National Commission on Excellence in Education, producers of the highly publicized report A Nation at Risk, *supports his plans for reducing federal financial support for education. Not so, replies Rep. Carl Perkins (D-Ky), Chairman of the House Education and Labor Committee. Perkins says that 8 of the 10 Commissions that he queried denied that "the President's proposals for education [spending cuts] were anywhere suggested or endorsed by the Commission's report."*

Public and private spending on research and development will reach a record $97 billion in 1984, the National Science Foundation estimates. Industry will be the largest source of money, $49.7 billion, NSF says, while the federal government will provide $44.5 billion. "Real" growth is estimated at 7 percent above the 1983 level; from 1975-83, growth averaged 4.4 percent. Basic research is expected to be one of the big gainers, rising by a real 6 percent. (These and other data are from *Highlights* 83-16, available without charge from National Science Foundation, Division of Science Resources Studies, 1800 G St. Nw., Washington, DC 20550.)

Congress Assails Zig Zags on AIDS Budgeting

The following excerpts are from recent Congressional hearings and floor debate on federal support for AIDS research:

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House Intergovernmental Relations and Human Resources Subcommittee, Committee on Government Operations, August 1 and 2.

Rep. Sander M. Levin (D-Mich.) [Reading from an article in the *New York Times*] Dr. Richard Krause, Director of the National Institute of Allergy and Infectious Diseases...says that he has shifted money from other projects to finance some AIDS research because it was so pressing a problem. But he has also expressed deep concern that unless more new funds become available for AIDS, valuable projects involving other diseases might not be done. The tragic possibility exists, he said, that the answer to AIDS may come from the kind of research activity in basic virology and immunology that might go unfunded.

Chairman Ted Weiss (D-NY). Do you care to comment on that, Dr. [Edward] Brandt [Assistant Secretary of Health]?

Brandt. That certainly is the quote that is in the paper from Dr. Krause. And I agree with Dr. Krause, in the following sense: I think the answer to AIDS may very well come from the kind of research activity that I think is underway. It is quite possible that one of the grants that is unfunded—but we have had unfunded grants throughout history; that's not going to change. And what I'm asking for, for these people who are tossing all these numbers around, I think we need some specific advice as to where that money might wisely be spent, what kind of research. We are, in fact, bringing in consultants who are knowledgeable, competent, and we're attempting to follow their advice.

★★★

Weiss. What happened between your testimony in April [1983]...and the early part of May when you advised the [Appropriations] Subcommittee Chairman that, in fact, you could use some additional money, to the tune of $12 million, not as new money, but to transfer that from existing programs?

Brandt. I would like to go back to 1981 to put this thing in some perspective. In the President's budget for fiscal year 1982, there was a request for $20 million for use in emergencies....This was turned down [by the Congress] and instead we were instructed to deal with emergency funding in the same way we had always dealt with it, which was to make the expenditures and then go back and request funding from the appropriate committees....

Weiss. I'd like you to answer my question....In testimony [in April] you said you didn't need any authorization for additional money or for transferring—you could take that yourself....Then in May... you notified the Appropriations Committee that you could use a $12-million transfer....Did you discover [the need for the additional money] between April and your testimony in May?

Brandt. We have during that period of time almost continually evaluated where we stand on AIDS....We were reviewing this process...exactly on a week-by-week basis to try to see where the leads were....At that point in time we were anticipating that we might get a breakthrough somewhat earlier than we did. On May 9, Mr. [William] Natcher [D-Ky.], Chairman of our Appropriations Subcommittee, sent me a letter requesting I give him an analysis of the budgetary needs....And we immediately went in and reanalyzed the whole budgetary situation....My letter to Congressman Natcher of May 18 [listing $12 million in additional AIDS projects] was...a result of that whole thing. The situation changes all the time, Mr. Weiss. We are dealing with a very fluid and dynamic situation....

Margaret M. Hecker, Secretary, Department of Health and Human Services, April 12, 1983, in testimony to the House Appropriations Subcommittee for Labor, HHS, and Education: ...I have spoken to the head of the CDC on a number of occasions on the subject and there is no stone being left unturned to pursue an answer. This is a serious, very serious, problem and every single research avenue of the Department is being directed toward the resolution of this problem....I would certainly like to have unlimited resources. I see problems. I see needs. I have to say that in the AIDS situation, I really don't think there is another dollar that would make a difference, because the attempt is all out to find an answer.

House Subcommittee on Health and the Environment, Committee on Energy and Commerce, May 9, 1983.

Chairman Henry A. Waxman (D-Calif.). The Centers for Disease Control spent $4.5 million last year on AIDS. Is that a fair statement?

Brandt. Yes, sir, that is a fair statement.

Waxman. Now, when the Reagan Administration has submitted its budget for 1984, the request is not for $4.5 million or more to deal with an ongoing public health crisis; the request is for only $2 million....How can you justify reducing the amounts of funds for the CDC... when we are in the middle of this public health crisis, not at the end of it.

Brandt. Well, you know, obviously, one can always

(Continued on page 7)

...23 Research Projects Approved but Unfunded

(Continued from page 1)

the Cancer Institute held a workshop to examine what was known about the disease. Given that the number of cases was still small, and that summertime is a poor season for convening biomedical researchers on short notice, the meeting was a rapid response to a murky situation. But, apart from valiant efforts by the Centers for Disease Control to track the disease on a shoestring budget, little that followed was characterized by rapidity or urgency.

Following the September meeting, a few investigations were undertaken by NIH intramural staff and at several NIH-supported centers for the study of sexually transmitted disease. But the big decision of that fall called for expanding the then-small cadre of AIDS researchers by inviting outside investigators to submit research applications. The legal instrument for doing this was the rarely used Request for Applications (RFA), a device somewhere between a solicitation for contracted research, for which a specific job is to be done, and the traditional grant mechanism, which provides support without requiring a specific outcome.

The job of writing the RFA, which turned out to be 6 pages, got underway in February 1982. After reviews by two boards and various NIH administrators, the RFA was finally done and issued—on August 13, 1982, with October 22 as the deadline for submissions. Thus, 13 months would elapse between that first workshop on AIDS and the commencement of yet another laborious process: the review of applications.

Deadline day found the NIH in receipt of 45 applications for AIDS research, with the request for funds totaling $13.5 million. Meanwhile, a special interdisciplinary study section of 25 members was established to review the applications. It met on December 13, 1982—7 weeks after the deadline for applications. Why not sooner?

One of the NIH administrators involved in the review process explained that "a lot of preliminary staff work has to be done, and it also takes a lot of time to arrange to get so many people together." Part of the preliminary work included visits to 8 laboratories by teams totaling 117 persons.

Given that the menace of AIDS was then clearly understood—by January 1982, 216 cases and 88 deaths had been reported—couldn't the review process have been speeded, perhaps by telephone, or even teleconferencing? The answer from NIH was that nothing can match face-to-face peer reviewing and site visits as a process for ferreting out the strengths and weaknesses of research applications. Though the National Science Foundation and other federal research agencies and private foundations, while also employing site visits on some occasions, seem to do well at picking winners through mail and telephone review of applications, NIH is adamant on the virtues of face-to-face review. (An administrator there did concede to SGR that teleconferencing is now under consideration.)

With reports of the sluggish process reaching Congress, Rep. Henry A. Waxman (D-Calif.), Chairman of NIH's principal law-writing authority in the House, the Subcommittee on Health and the Environment, asked DeVita last February about reports "that the process of granting awards is taking a very slow pace."

DeVita replied: "It is following the normal pace. Some of the grants for the very big centers in New York, Los Angeles, and San Francisco are what we call program project grants. They may contain 16 or 17 different projects....So we normally send site-visit teams out there to be sure we are getting good quality research. And it takes time to assemble these people. It is the normal rate of speed," DeVita said, adding that "we can circumvent the last few months, if need be, by a mail or phone ballot" of the National Cancer Advisory Board, the rubberstamp final stage of the review process.

In any case, of the 45 proposals, the peer reviewers scored 33 within the "approved" range. Approved, however, is not the same as money in the bank. Of the 33, only 10 were funded, for a total of $2.8 million. Did a substantial difference in scores distinguish the approved but unfunded from those that received money? Yes, but not consistently. In NIH's topsy turvy scoring system, where lower is better, the poorest of the funded projects was scored at 262. Two approved but unfunded proposals scored better than, while three others were

(Continued on page 4)

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...Administration Reverses on Need for Money

(Continued from page 3)

quite close to that winning score.

Though their projects passed scientific muster in mid-December 1982, the successful applicants were still some distance from actual receipt of funds, since the approved projects still required a favorable nod from the National Cancer Advisory Board. As noted before, that part of the process was accelerated. Amidst self-congratulations for what they seemed to regard as the Miracle of Bethesda, the NIH apparachiks started dishing out the money in April—8 months after applications were first solicited, and 14 months after NIH first decided to stimulate additional outside research on AIDS. Two other RFAs now in the mill are moving at the same unhurried pace.

Why were 33 approved projects—later reduced by 3 or 4 as additional money was secured—left unfunded long after the seriousness of AIDS was well understood? A small and easily misleading part of the answer is that because of tight budgets in recent years, NIH generally funds only one-third of its approved projects. Testifying at hearings held August 1 and 2 by a very hostile House Government Operations Subcommittee, chaired by Rep. Ted Weiss (D-NY), Assistant Secretary Brandt scoffed at concern about the unfunded projects, and suggested that they're a normal part of the NIH enterprise. But that hardly accords with the "top priority" of which Brandt and other Departmental brass have often spoken. Nor does it explain why, when Congress demanded a shopping list of essential AIDS research from the NIH and the CDC, and then supplied the $12 million that was needed to finance it, one of the top items was money for approved but unfunded research.

The really important reason for the previous lack of money to finance AIDS research is that the Reagan Administration did not exempt work on the disease from its aversion to domestic spending.

For example, on April 14, CDC Director William H. Foege told the House Appropriations Committee that his AIDS researchers could make good use of more money to track and study the disease—a rare move for Foege, who has consistently abided by Administration strictures against budget-busting appeals on Capitol Hill. The funds, Foege said, "could be efficiently and effectively used to augment in-house laboratory investigations into the cause of AIDS, including the purchase of supplies, materials and equipment."

On May 9, Foege's boss, Assistant Secretary Brandt, told Rep. Waxman's subcommittee that additional funds would not be requested to augment the CDC budget. The reason, he said, was that "as of three weeks ago, we had not identified precisely how much or where such funds should go."

Asked to explain why next year's AIDS budget for the CDC had been set at a level $2.5 million below the current budget, Brandt replied that "at the time that we prepared that budget and so forth, we really were convinced that we would be a long ways down the road towards a solution to this problem." At no point over the past two years has that optimism been shared in the AIDS research community.

In response to the Congressionally requested list of needs drawn up by the NIH and the CDC, an additional $12 million will be provided for AIDS research in the final months of this fiscal year, bringing the total to a respectable $26.5 million. The beneficiaries will include at least some of the scientists whose projects—submitted almost a year ago—were approved but not funded for lack of money.

Though the Administration has been shamelessly congratulating itself for the vigorous research effort that is at last being mounted against AIDS, it is the Congress that deserves the credit for the new money, as well as a good deal of the previous funding.

On May 9, Rep. William H. Natcher (D-Ky.), Chairman of the Health Appropriations Subcommittee, asked Brandt to specify "how much in the way of additional resources could be effectively used" for AIDS research in the current fiscal year.

Brandt responded with the NIH and CDC $12 million list of needs, but—apparently under Administration orders—said that rather than a direct appropriation, his department merely wanted authority to transfer $12 million from unspecified other activities. Congress promptly responded with a $12 million supplemental appropriations for AIDS research.

The research enterprise is now being provided about as much money as it can effectively use. But little thanks for that belongs to the Administration, despite its tub thumping about high priorities and "no stone being left unturned"—HHS Secretary Heckler's pledge, just as plans were being made to cut back the CDC's spending on AIDS.—DSG

NAS to Study 55 MPH Limit

The Department of Transportation has contracted with the National Academy of Sciences for a Congressionally mandated study of the costs and benefits of the 55-mile-an-hour speed limit. The study will be carried out by a 19-member panel chaired by Alan A. Altshuler, Dean of NYU's Graduate School of Public Administration. The panel's report is supposed to be delivered to the Department next August.

Industry Cuts Back on Basic Research Support

Growth continued, but some of the zip went out of industrial support of fundamental science last year, according to a study just issued by the National Science Foundation, *Trends to 1982 in Industrial Support of Basic Research*.

The report, based on a survey and selective followups of firms that account for half of all company-financed basic research, notes the annual growth rate in this area averaged a "real" 6.7 percent between 1975 and 1981—for a total of $1.3 billion in the latter year. But, on the basis of information supplied by company R&D officials, NSF says, spending in 1982 was expected to increase by less than 3 percent.

The reasons cited, NSF reports, were "expectations of decreased earnings and the need to channel scarce research dollars into shorter profit-improvement programs, and high inflation and interest rates that create an unfavorable climate for capital formation." Further summarizing company explanations of cutbacks in the growth rate for basic science, the NSF report states: "Because it often requires a long-term commitment of financial resources and involves a high degree of risk, basic research is often one of the first areas to be cut back whenever stringent financial constraints must be imposed. In addition, any potential benefits from basic research usually are not readily apparent; profits from this type of project may not be realized until far in the future.

"All of these factors combined," the report notes, "have necessitated the postponement of many basic research projects until profitability is restored."

What may be particularly ominous in terms of the future of basic research and industry was a finding that some companies are making long-term research commitments—but not for basic research. On the basis of its survey and followups, NSF points out that "The increasingly complex nature of today's state-of-the-art technology has lengthened the time horizon needed to perform applied research or to develop a specific product or process. Officials in several industries, including the aerospace, discussed this aspect of R&D activity, explaining that a 10-year commitment is necessary even after the fundamental research has been completed," it was pointed out.

Since basic research accounts for only 4 percent of company-financed R&D, the reduction in growth suggests a need for the apostles of fundamental science to intensify their preaching.

NSF also reported that 85 percent of the companies support basic research in universities, and that two-thirds of the firms had or were planning to increase their academic support. But NSF goes on to note that industry still spends less than one percent of its R&D budget in university laboratories.

(*Trends to 1982 in Industrial Support of Basic Research*, NSF 83-302, 25 pages, is available without charge from the Division of Science Resources Studies, National Science Foundation, 1800 G St. Nw., Washington, DC 20550.)

New Industrial Commission to Include Study of Federal R&D

One of the newest commissions in commission-laden Washington is the President's Commission on Industrial Competitiveness, which might be of more than passing interest to the scientific community.

The reason is that in addition to the subjects of scrutiny that obviously follow from its name, the 20-member Commission is expected to look into federal support of research and development. Just what it will do on that and other topics is uncertain at this point. The Commission was created by Executive Order in June and its chairman—John Young, President of Hewlett-Packard—and members were announced last week. But otherwise little has been decided about its agenda, except that it will look into such general areas as antitrust restraints on collaborative research, tax credits for research, and academic-industrial cooperation. Along with those subjects, Young told the press, government support of R&D will be examined, but how and for what purpose were not spelled out.

It may well be that the Commission is intended to be a serious enterprise on a troublesome subject, but its creation at this time has inspired speculation that Mr. Reagan's interest arises from Democratic harping on the need for a national industrial policy. He's alternated between silence and opposition on that point. But since the commission format has served well on Social Security and the MX, Mr. Reagan—as evidenced by the Kissinger Commission—seems to be getting fonder of that style of government.

With the crucial matter of staffing still to be attended to, the temporary focal point for the Commission on Industrial Competitiveness is the White House Office of Policy Development. The Office of Science and Technology Policy says it expects it will be involved in the R&D phase of the Commission's work, but isn't sure how or when. That's Washington in August.

The Ups and Downs of Federal Energy R&D

(Dollars in millions)

Agency and program	Actual								Estimates				
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Total	$556	$574	$630	$759	$1,363	$1,649	$2,562	$3,134	$3,461	$3,603	$3,501	$2,889	$2,034
Dept. of Energy & Predecessor Agencies	534	548	596	699	1,205	1,470	2,335	2,867	3,192	3,309	3,170	2,613	1,779
Solar	—	—	—	4	40	94	256	332	463	409	442	248	73
Geothermal	—	—	—	6	25	31	51	105	132	123	131	44	10
Hydropower	—	—	—	—	—	—	2	NA	5	15	7	3	—
Nuclear fission	271	276	295	316	460	520	801	880	875	872	886	927	717
Magnetic fusion	28	31	37	53	98	130	195	207	211	235	259	293	359
Electric energy and energy storage systems	—	—	—	—	—	—	—	88	95	101	85	57	—
Biological and environmental research	65	68	77	87	119	135	163	185	195	215	148	151	121
Supporting research	93	89	89	89	109	113	129	160	192	218	235	244	273
Fossil energy	36	38	49	88	312	369	557	687	668	727	650	407	104
Energy conservation	—	—	—	9	34	66	167	165	226	264	197	84	19
Uranium enrichment	26	31	35	45	2	4	7	44	131	129	131	156	104
Other	16	16	14	2	7	10	6	17	—	—	—	—	—
Nuclear Regulatory Commission	22	26	34	42	64	88	112	137	157	191	227	223	220
Environmental Protection Agency	—	—	—	18	95	90	114	130	113	103	104	52	35

SOURCE: NSF (see In Print below)

In Print

Federal R&D Funding for Energy: Fiscal Years 1971-84, an NSF report, shows the tight linkage between money for research and political perceptions of peril. From 1971-74, federal money for energy R&D rose at a relatively sluggish annual rate of 10.9 percent; after the oil crisis of 1973, a growth binge occurred—sending the pace of funding up an annual rate of 30 percent for the period 1974-80, "higher than any other budget function," NSF reports. Then came the plunge: from 1980-84, federal energy R&D experienced an annual decline of 11.4 percent, "greater than for any function." Basic research was one of the few fields exempted from the budget roller coaster. Though it doesn't show up as a separate budget item in the accompanying table, NSF reports that basic grew at an annual rate of 14.6 percent between 1974-80 and 12.7 percent in 1980-83. (NSF 83-301, 19 pages, available without charge, from Division of Science Resources Studies, National Science Foundation, 1800 G St. Nw., Washington, DC 20550.)

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The Condition of Education, 1983 Edition, A Statistical Report, prepared by the National Center for Education Statistics, contains a huge collection of data about all levels of education in the US, including enrollments, salaries, degrees conferred, and results of public-opinion survey results, among which was the finding that "All groups of respondents rated public schools in the nation lower than they rated those in their community." (273 pages, $7, available from Superintendent of Documents, USGPO, Washington, DC 20402; specify Stock No. 065-000-00183-7.)

NIH Fills Clinical Post

All but one of the major administrative posts at the National Institutes of Health are now filled on a full-fledged basis—a rarity in recent times—following the appointment of a new director for the NIH Clinical Center. The job went to John L. Decker, who was chief of the Arthritis and Rheumatism Branch of the National Institute of Arthritis, Diabetes, and Digestive and Kidney Diseases since 1965.

Still to be filled is the top post at the NIH's Fogarty International Center, which Mark S. Beaubien has been holding on an acting basis.

Next on the senior vacancy agenda is the directorship of the National Library of Medicine, which Martin M. Cummings has announced he's leaving October 1.

The filling of the NIH's top jobs involves such elaborate and lengthy ritual—it often takes about a year to spot and catch the desired person—that NIH has a small, permanent secretariat for servicing its search committees.

...Waxman: Why Are Funds Being Cut at CDC?

(Continued from page 2)

go back and look at one's actions earlier and try to determine whether you would have done things differently....This looked like a drug problem early on.... [It was only] in the last few months that we have begun fully to understand the complexity of the illness.

Waxman. Now that you understand the complexity of the illness, why are you asking for funds to be reduced for the Centers for Disease Control?

Brandt. I will have to go back and look at that. I heard you say that earlier. I was not aware that we had done that, and indeed, information I was just handed is that money will probably go up in 1984.

★★★

Waxman [to Brandt]. I know you don't make all the policies for the Reagan Administration. But, unfortunately, those who make the policies sent you down to talk to us and to take the sting out of our unhappiness.

House floor debate, May 25, on Fiscal Year 1983 Supplemental Appropriations Bill.

Rep. Silvio O. Conte (R-Mass.), Ranking Republican, Appropriations Subcommittee for Labor, Health and Human Services, and Education. Let me inform the members of this body that concern over the funding of AIDS research was expressed by every member of the Subcommittee during the hearings that the Subcommittee has been conducting on the budget. Every agency involved in the investigation and research on AIDS was asked to describe their efforts and to indicate what more that could be done. They all stated that they had adequate resources....I might say that I am personally very distressed with this situation, where the Administration comes before the Subcommittee and states time after time that sufficient resources are available and then changes its tune at a time when it is very difficult for the committee to consider this new position. Now that borders on not dealing with the Subcommittee in good faith, and I for one must indicate my disappointment with the actions of the Department on this issue.

NAS Information Chief Quits

Howard J. Lewis, a staff member at the National Academy of Sciences for the past 26 years, has resigned to pursue other interests, including book writing and consulting.

Lewis, Director of the Academy's Office of Information, was one of the longest survivors of the senior-staff sweepout that began two years ago when Frank Press, White House Science Adviser under Jimmy Carter, became President of the Academy. Little harmony was visible between Lewis and the new regime, including Press's chief aide, Philip M. Smith, who was appointed NAS Executive Officer after having served under Press at the White House.

In conjunction with Lewis' departure the Office of Information, now headed by former Associate Director Barbara Jorgenson, has been merged with the Academy's congressional lobbying department, headed by Paul L. Sitton, Assistant to President Press.

ACS Lists Research Funding

The giant of the health charities, the American Cancer Society, has announced research grants and postdoctoral fellowship awards totaling $57 million for its current fiscal year, a period in which it collected $182 million from the public.

ACS, which pitches its fund-raising appeals to research, is sensitive about the thin slice of the take that is actually devoted to that purpose—which may explain why the total received from the public went unmentioned in a press release on research and fellowship awards.

The balance of the money, ACS says, goes mainly for public education, patient service, and administrative costs.

Ahearne Joins Resources Group

John F. Ahearne, a former member of the Nuclear Regulatory Commission, has been appointed Vice President of Resources for the Future, a Washington-based policy-research organization. Ahearne has been succeeded on the 5-member NRC by Fred Bernthal, formerly chief legislative assistant to Senate Majority Leader Howard Baker (R-Tenn.).

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Science, Engineering Jobs Growing in Academe

Universities and colleges continued to add scientists and engineers to their staffs last year, but the growth rate lagged behind that of industry and government and included an expanding proportion of part-timers.

Those are among the major findings in a newly issued National Science Foundation survey of employment of scientists and engineers in institutions of higher education. Based on returns from questionnaires sent to 2200 universities and colleges offering programs in at least one field of science or engineering, NSF surveyors found that academic jobs in these fields rose to 348,800 in 1982—which works out to the same annual 4-percent growth rate that has prevailed since 1975. For industry and government, the 1981-2 growth rate was 7-8 percent. NSF says the pattern can "be attributed in part to current and projected future declines in the rate of enrollment growth as well as to institutional budgetary constraints."

Nearly half of the gain in academic jobs resulted from part-time employment, which increased by 9 percent, thus raising the proportion of part-timers in academic science and engineering posts to 23 percent, NSF reports.

"This represents an acceleration of the increasing trend toward use of part-timers." The biggest growth in part-time employment occurred in the computer science—up 28 percent—which reflects the difficulty of luring full-time specialists away from better-paying jobs in industry.

The fastest rate of growth among academic institutions was in 2-year colleges, which expanded their science and engineering staffs by 10 percent. Already relying heavily on part-timers—they total about two-fifths of their staffs—the two-year institutions increased their part-time employment by 17 percent in 1982.

As for the universities that ranked highest last year in employment of scientists and engineers, NSF lists the top 15 as shown above.

(The survey report, 4 pages, NSF *Highlights* 83-316, is available without charge from the Division of Science Resources Studies, National Science Foundation, 1800 G St. Nw., Washington, DC 20550.)

Academe's Top Science, Engineering Employers

Institution	S/E employment	Percent change 1981-82
Total, all institutions	348,800	4%
Total, leading 15 institutions	46,800	3
1. Harvard University	5,992	3
2. Ohio State University	4,232	13
3. University of Wisconsin-Madison	3,729	-2
4. University of Minnesota	3,534	-3
5. Johns Hopkins University	3,488	5
6. Louisiana StateUniversity	3,072	1
7. University of Michigan	3,064	-8
8. University of California-Los Angeles	2,899	16
9. University of Illinois-Urbana	2,563	(1)
10. University of Washington	2,520	(1)
11. Cornell University	2,415	-3
12. University of Florida	2,376	5
13. University of California-Berkeley	2,315	11
14. Yale University	2,305	10
15. Pennsylvania State University	2,283	3
Total, all other institutions	302,000	5

[1]Less than 0.5 percent change

SOURCE: National Science Foundation

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